THE MAKING OF PAINT IN AMERICA

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THERE is probably not a subject which is of more widespread interest at the present time than that of paint. Closely following the recent action of the French government in making it a criminal offense to longer follow an antiquated and dangerous method of painting in that country, our own government is about to take steps toward forcing out of existence the "great grandfather ideas" which still largely prevail in the United States, and which mean each year a loss to the nation of many millions of dollars.

Paint has long been a much abused article. Although one of the most common things in use, recent official investigations have shown that, in reality, the great mass of people are but little acquainted with it. Not one in a hundred knows of the "paint war" which has been going on for several years past, or of the government's efforts to crush those fraudulent concerns who, by making poor paint, have been thorns in the side of an industry which is now one of the greatest in the country, and which is famous as being pre-eminently American the world over.

It is estimated that through a lack of a knowledge of paints, the people of the United States are now losing $35,000,000 a year. This vast sum is wasted by those who still continue to make their paints in the fashion of a hundred years ago—by mixing up turpentine, linseed oil, and white lead by hand, without profiting in the least by the advance of scientific knowledge.

The government itself concedes that in no branch has science progressed more during the past quarter of a century than in the manufacture of paint. And for this reason this "common, unsung thing" is now playing a tremendous part in the prosperity of the country. Not long ago President Roosevelt said that our aggregate wealth now equals that of all the other great powers; that while other nations counted in millions, the United States figured in billions.

Over $100,000,000 of these billions is now yearly represented by the great paint industry. During the past ten years the raising of flaxseed has increased from 10,000,000 to 30,000,000 bushels—because of paint; the turpentine product has increased from 100,000 to half a million barrels, and the pig-lead production has grown from 90,000 to 325,000 tons, the zinc oxide production from 23,000 to 75,000 tons—all because of paint.

Today paint-making in the United States is one of the most highly specialized and organized of modern industries—and it is crying for men—men—men. Ten thousand young men are wanted to learn the paint-making business today. The industry has almost outgrown itself. People are beginning to learn that the best way to preserve and to beautify a structure is to paint it, and that the paint factory is a cheaper source of supply than the lumber yard or a planing mill. And for these reasons, paint manufacturers openly say, there are no better opportunities in the country today for young men than in the paint industry.

The rise of the great American paint industry and what the country owes to it is a story of astonishing interest, and now that the government is doing all that it can in the matter, the public will begin to see the absorbing side of what has long been considered a "dry" subject.

In 1860 such a thing as a ready-prepared paint—a paint that could be put into cans, kept there for months, and shipped hundreds or thousands of miles—was unknown. Today there are eighty-eight great paint manufactories in the United States—as many as in all the rest of the world—and their annual product exceeds $130,000,000. This product, manufactured by an army of over 70,000 men, goes into almost every part of the world. American paint covers one half of the homes in England, France, and Germany; it goes into the North seas and into the South seas; wherever there are things to be painted, there it is found; it is almost the only product of its kind in South America, and thousands of gallons of it are used annually in Africa, India, and other distant lands. The industry affords a livelihood to more than 300,000 people, and within the next five years it is believed that its growth will have rivaled that of the steel industry, and that its capital will be close to a billion dollars.

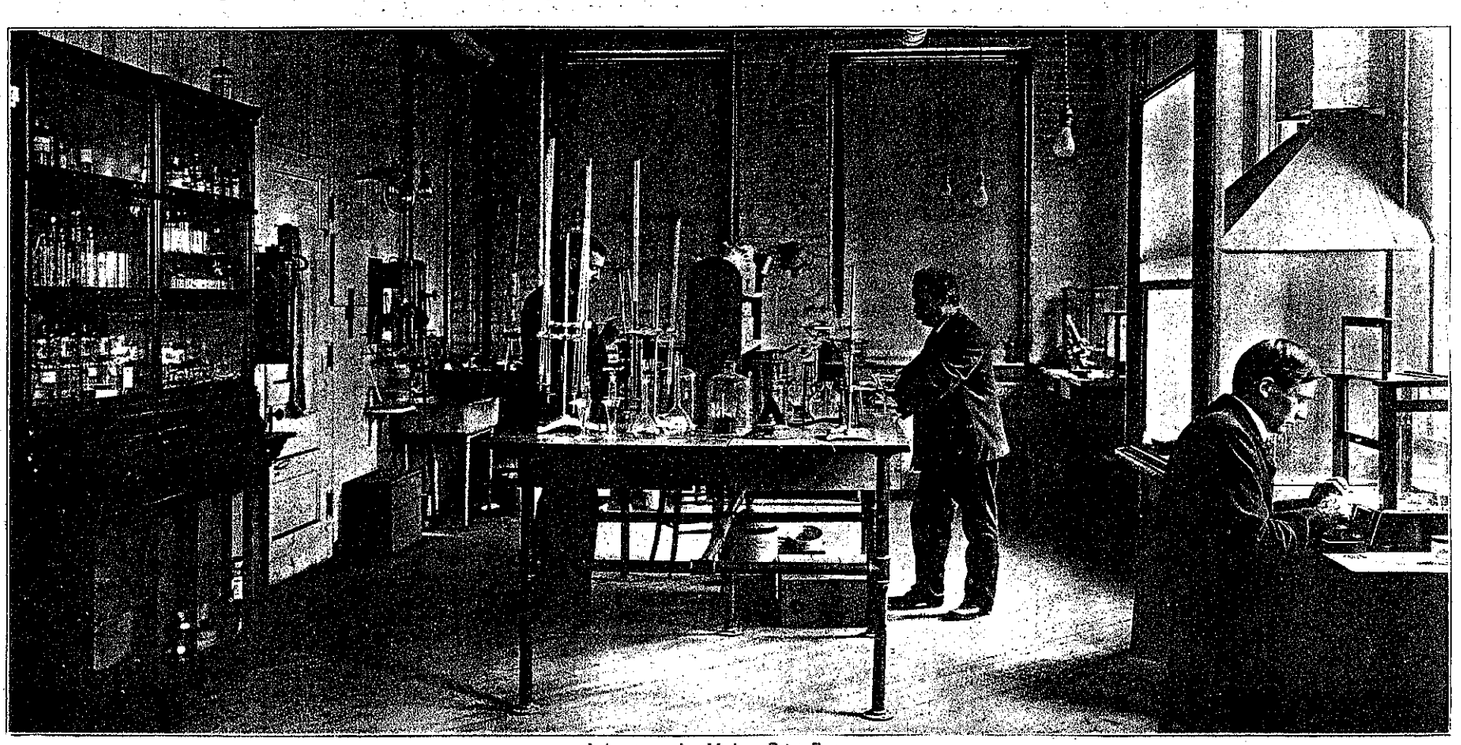
Until one goes through a modern paint factory he can hardly realize what this industry is. Until then he will hardly have an idea to what an extent the inventions of science have replaced the old methods of our grandfathers—the paint pail, the turpentine jar, the bottle of linseed oil, and the hand paddle.

At the very heart of every one of these great institutions is a laboratory, in which chemists are constantly at work. Few people know that, as carefully as chemists do their work in great drug institutions, just as carefully do these scientists perform theirs in the paint factories. Nearly five hundred of these experts are employed in this country; for science has proved that paint must be studied, must be improved, and must be made to fit every environment; for the paint that protects a home of the North is not the best paint for the Southern mansion, and that which dresses an Eastern cottage is but illy suited to a ranchman's home in the hot blasts of a desert. These scientists, of whom but few have ever heard, have discovered that in this country of every variety of climate, paints must necessarily vary greatly in composition; and so it is not remarkable that the paint of a manufacturer which is found in New Orleans is different from the paint of that same manufacturer sold in New York or Chicago.

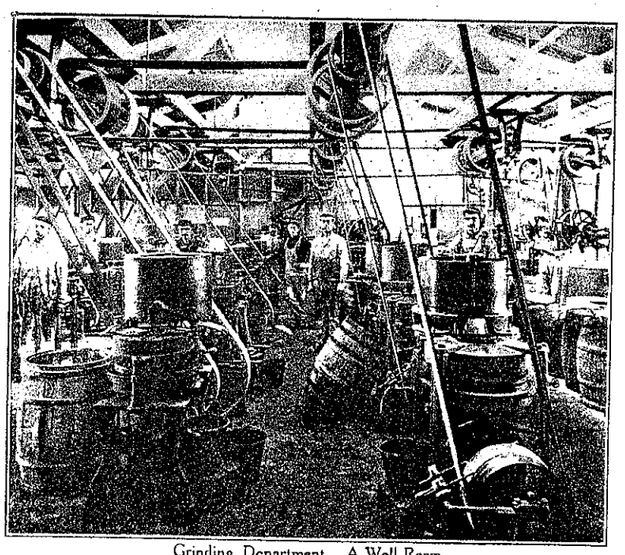
It is because Americans have gone at the making of paint in a scientific way that the industry is now one of the greatest in the country and, arm in arm with American steel, has invaded every civilized land. American paint worked out the revolution in France. It was because of its vast superiority over the native product that French manufacturers first began to profit by their scientific discoveries; and it was because they adopted American methods that the government ultimately saw the advantage of using scientifically prepared materials instead of the mixture of their ancestors, and issued a decree to the effect that the old methods of painting must give way to the new.

An investigation of the paint industry reveals certain facts which are not only of extraordinary interest, but which also seem scarcely believable. It is these facts, gathered by experts, which give rise to the expectation that this industry will, during the next few years, become the third, if not the second, manufacturing industry of the country. For, although American factories are now producing about 125,000,000 gallons of paint a year, it is estimated that this country could use three times this annual product at the present time, and even at that there would still be plenty of unpainted buildings left. Investigations have shown that this is largely to be attributed to the negligence of the agricultural masses of this country. Of 1000 farmers visited in a certain county, these investigations showed that 613 had old-fashioned materials on hand for the making of paint, 241 had not used paint on their buildings for many years, while only the small remainder bought the best of modern materials. In fact, in almost every barn one will find an old "paint pail" with caked white lead sticking to it, and nearby a bottle of linseed oil and some turpentine. When the owner wishes a little paint he mixes up some of the dope.

It is expected that the government will issue several millions of pamphlets for the farming population in the not distant future, and already country people are beginning to give up the old-fashioned methods, while every modern and progressive farming journal is urging its readers to use more paint in the preservation of not only their buildings, but of their farm machinery as well. This explains the present tremendous call for help from the country's paint industry. A large manufacturer stated to the writer a few weeks ago that he had dozens of young men to whom he was paying from $25 to $30 a week, and that he could use many more. In almost any other occupation these young fellows would have to work for years to attain such a salary, which is considered an exceedingly good one in a manufacturing institution. As illustrating this crying demand for specialized labor, one might cite a few of the many ways in which paint manufacturers endeavor to satisfy their employés. As stated above, they pay them very good wages; of the eighty-eight great paint factories in the country all but about twenty possess fine libraries for their working people; over fifty have dining-halls in which dinners are served at exceedingly small cost, and in some



Laboratory of a Modern Paint Factory



Grinding Department. A Well Room

Coach Color Department

instances free; almost without exception they have "rest rooms" for the young women employés, and about thirty have music rooms, while a large number of them have large halls in which dances are given from twice to four times a month.

As stated before, one has but a small idea of what the country's paint industry is like until he goes through a great manufacturing institution. In such a journey, he should begin with the scientific department, and here he will meet with the first of the many surprises in store for him. Here in the heart of a great plant, which has never been of especial interest to him, he finds a splendidly equipped laboratory and from half a dozen to a dozen expert chemists and experimenters. These men are the best of their kind in the world, for there is a constant rivalry among different "works" for the possession of the best experts in the country. From morning until night for three hundred days in the year these men do nothing but investigate. Every ounce of material that comes into a factory is examined by them. The experimental department is in reality a miniature paint factory. Here in tiny paint grinders and mixers these scientists make up batches of paint,—not more than a pint in each batch. The hundreds of thousands of gallons to be made afterward out in the "works" must absolutely correspond to the result obtained in the scientific department.

These chemists are also constantly searching for new and better materials for the making of paints. It is not commonly known that a turpentine famine threatens the world—that within the next decade turpentine will practically have become a thing of the past. But this is so, and these chemists have already discovered several volatile "thinners" equally as good to take its place. As a matter of fact, if turpentine were required to be used exclusively in paints and varnishes the price of these paints would run to something like $2.00 a gallon.

In this department every new brand of paint put out by a company's eighty-seven rivals is immediately analyzed; if it is a very good thing it is duplicated; if it is poorer than the paints put out by the investigators it is thrown aside.

After the raw materials are endorsed by this scientific department, the first real step in the manufacture of paint begins. In a vast room, in which there may be a hundred or more huge mixing machines, one sees this first operation. Each "mixer" is a steel tank, in which sharp steel paddles whirl at great speed. Down among these paddles is poured linseed oil and to this is added white lead, oxide of zinc, or any one of several other white pigments in powder form. This mixture forms the "base," which, as shown above, can be made of any one of several pigments. For an hour after this the steel paddles whip the mixture into creamy whiteness, and when one stops to consider that it takes these powerful paddles an hour to perform what millions of people think they can properly do in five minutes with *one*

A Demonstration

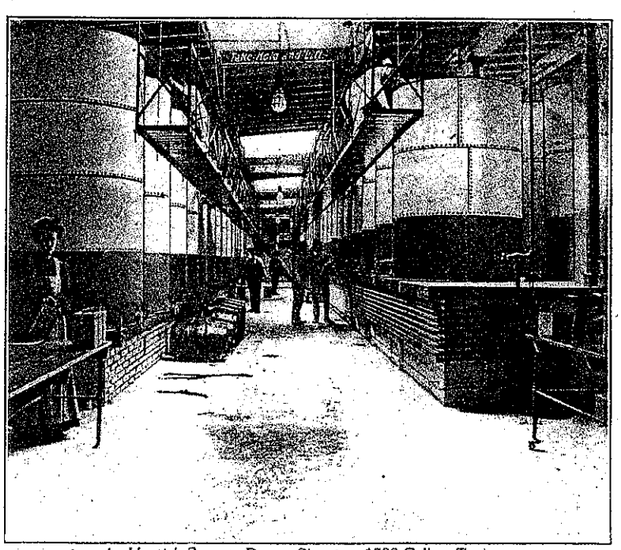
wooden paddle worked by hand, he begins to see why old-fashioned methods of paint-making cost the country millions of dollars a year. But in a modern paint factory even this hour of mixing is not considered sufficient. The "base" is then run into great "grinding" machines. Imagine two huge, flat stones, weighing half a ton apiece, laid one against the other flatwise, and then set whirling in opposite directions, and you have a fair idea of the important part of one of these machines. Between these great stones the mixture is ground until every atom in it has become thoroughly mixed, or "crushed." And yet this, too, is the work which the millions mentioned above believe can be done with a little wooden paddle within the course of half a dozen minutes! After this operation the proper amount of turpentine, and other "thinner" is added, and the paint is ready for cans. If some other color than white is wanted, the tint is added during the "base" making process.

While the making of ready-mixed paints is the very foundation of the paint industry, it must not be supposed that only this product is made. The twentieth-century paint factory is a wondrously diversified institution—in fact, it might be regarded as a dozen or more manufacturing plants in one. Each division of the industry has its own department and equipment and its own special building. One complete outfit of tanks, paint mills, mixers, and canning devices is devoted to the mixed-paint department, another to paste paints, a third to carriage and wagon colors, a fourth to enamels, a fifth to varnishes, and others to the making of stains, etc.

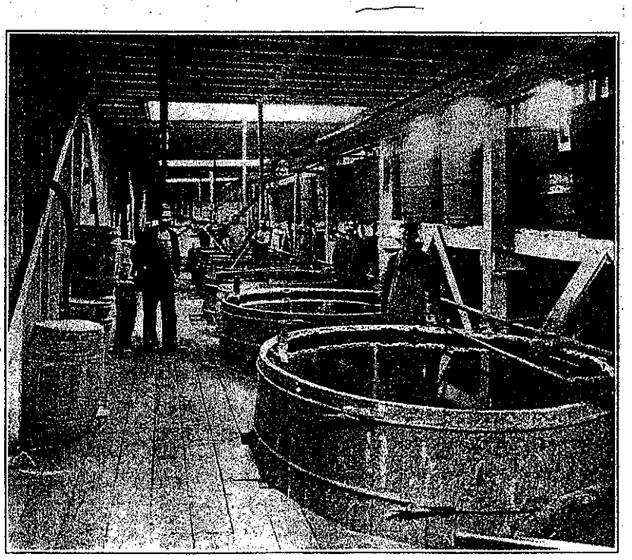
This extensive specialization is what makes the paint industry one of great opportunity to young men of the present generation, for each of these different branches of the "works" requires specialization in certain directions. In many of the country's great paint factories a regular educational course is given to those employés who show that they want to make something of themselves. They are "worked" through every department of the particular branch which they wish to follow, and within a few months become really valuable men. It is the effort of the management of almost every paint factory to have as many of these "educated" men as possible, and they are willing to pay high wages to those who show themselves interested in and fitted for the work.

In fact, as one of the country's largest manufacturers recently said to the writer, "Paint is not only one of America's greatest products—it not only adds to the country's wealth by more than $100,000,000 a year; it not only saves other millions in property—but it has also opened up a vast field for the young men of today, a field which is far from being filled, and which will not be filled for many years to come."

Keeping in view the prospects, already alluded to, of a tremendous growing demand for paints, one can realize the vast importance of the paint industry both in relation to the materials used and demand for ambitious workers.



In Varnish Storage Room, Showing 1500-Gallon Tanks



Tanks in Dry Color Department